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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/721,427

11/26/2003

Maki Taniguchi

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EXAMINER

SCHWARTZ, JORDAN MARC

ART UNIT

PAPER NUMBER

2873

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/721,427

Applicant(s)

TANIGUCHI ET AL

Examiner

Jordan M. Schwartz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/7/05 (Election).
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 15-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Election/Restriction***

Applicant's election with traverse of Group Ia, claims 1-14 in the Election received April 7, 2005 is acknowledged. The traversal is on the ground(s) that the identified species are directed to the same invention and should be considered together. This is not found persuasive because the species of Group Ia is directed to a species of display device in which derivatives of a dyestuff molecule are soluble in a solvent in which the dyestuff molecule itself is insoluble, the species of Group Ib is directed to a species of display device having specific pigment grain sizes encapsulated in an inorganic material, and the species of Group Ic is directed to a species of display device comprising a plurality of pixels each with a light emitting layer formed of pigment grains aggregated or polymerized thereon. Each species is directed to a different invention and it would be an undue burden on the examiner to search all of the species together.

The requirement is still deemed proper and is therefore made FINAL.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

Claims 1 and 8 (and dependent claims 2-7 and 9-14) are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, that part of the claim stating, "wherein the plurality of first parts are distributed in the second part separately" renders the claim vague and indefinite. It is not clear if applicant means that the plurality of first parts are distributed in the second part separate from each other, or if applicant means that the plurality of first parts are distributed in the second part separate from the second part or if applicant means that the plurality of first parts are located in different portions of the optical region then the second part (the assumed meaning for purposes of examination) or if some other meaning is intended and the lack of clarity renders the claim vague and indefinite. Furthermore, as long as the first parts are not attached to each other they will inherently be distributed in the second part separately. The intended meaning is not known rendering the claim vague and indefinite.

In reference to claim 8, that part of the claim stating "the dyestuff molecules aggregated at the plurality of first parts of the optical region belong to one of at least two kinds of dyestuff molecules" renders the claim vague and indefinite. Specifically, since there is inherently more than one type of dyestuff molecule, a dyestuff molecule will inherently belong to at least one of two kinds of dyestuff molecules. Without specifically naming the two kinds of dyestuff

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molecules, it is not clear what this is adding as a limitation above the inherency rendering the claim vague and indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4-11, 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Schadeli et al patent number 6,180,315.

Schadeli et al'315 reads on these claims by disclosing the limitations therein including the following: a display device (abstract, column 44, line 5); comprising an optical region which consists of a plurality of first parts each formed of a plurality of dyestuff molecules aggregated thereat and a second part including derivatives of the dyestuff molecules (abstract, column 2, lines 14-32, column 42, line 6 to column 43, line 23). The plurality of first parts will inherently be distributed in the second part separately i.e. will inherently be located in different portions of the optical region then the second part (the assumed meaning), this being reasonably based upon Schadeli et al'315 disclosing the pigment being regenerated to form "structured colored patterns" and being regenerated "locally" (column 2, lines 14-32, column 42, line 6) which would require the regenerated or insoluble dyestuff molecules to be located in one

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portion of the optical region, and the non-regenerated or soluble derivatives of the dyestuff molecules to be located in a different portion of the optical region. Schadeli et al.'315 further discloses the derivatives of the dyestuff molecules as soluble in a solvent in which the dyestuff molecules are insoluble (abstract, column 2, lines 14-32, column 42, line 6 to column 43, line 23); the solvent as a hydrophobic organic solvent (column 17, lines 50-66); the derivatives of the dyestuff molecules converted to the dyestuff molecules by the transfer of energy, specifically heat treatment (abstract, column 2, lines 14-32, column 42, line 6 to column 43, line 23); the pattern variable in accordance with the selection of the process for transferring energy (abstract, column 2, lines 14-32, column 42, line 6 to column 43, line 23, column 44, line 5); the optical region has a principal surface and evenness depends on the selection of the process for transferring energy (column 44, lines 5-16, column 50, lines 20-37); the derivatives of the second part classified into at least two kinds obtained by chemical modification (column 2, line 46 to column 17, line 48, column 42, line 6 to column 43, line 23); the dyestuff molecules at one part having a different molecular structure than those of the rest of the dyestuff molecules at another group of the plurality of first parts (column 2, line 46 to column 17, line 48, column 42, line 6 to column 43, line 23); each of the dyestuff molecules having at least one nitrogen atom and the derivatives obtained by chemical modification by combining a substituent to at least one nitrogen atom (column 2, line 46 to column 17, line 48, column 42, line 6 to column 43, line 23); the optical region is provided as a functional film having a principal plane for the display device (column 44, lines 5-16); the optical

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region is an optical component assembled in a display device with a principal surface transverse to an optical path (abstract, column 2, lines 14-32, column 44, lines 5-16 and since it is forming patterns for the display the principal surface will inherently be transverse to the optical path); and the plurality of first parts shaped into a nanofine particle (column 2, lines 4-12). The nanofine particles of Schadeli et al'315 will inherently have a grain size not greater than 70nm, this being reasonably based upon Schadeli et al disclosing the particles as "nano-sized" (column 2, lines 4-12) and based upon the similarity in structure of the display device to that of the claimed invention.

Prior Art Citations

Schaedeli et al patent number 6,280,511 would have read on a number of the above rejected claims, however, such rejections would have been repetitive.

Allowable Subject Matter

Claims 3 and 12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: with respect to the allowable subject matter, none of the prior art either alone or in combination disclose or teach of the claimed combination of limitations to warrant a rejection under 35 USC 102 or 103. Specifically, with reference to claim 3, none of the prior art either alone or in combination, disclose or teach of the claimed display device specifically including, as the distinguishing features in combination with the other limitations, the claimed solvent cured to be

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used as a binder material with the plurality of first parts distributed in the solvent being cured and the derivative of the dyestuff molecules dissolved therein in the second part. Specifically, with reference to claim 12, none of the prior art either alone or in combination, disclose or teach of the claimed display device specifically including, as the distinguishing features in combination with the other limitations, the claimed respective sizes of the plurality of first parts varied gradually along a direction extending from one side of the claimed principal plane to another side thereof opposite to the one side.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jordan M. Schwartz whose telephone number is (571) 272-2337. The examiner can normally be reached on Monday to Friday (8:30 to 4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached at (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'JMS', with a large loop at the end.

Jordan M. Schwartz
Primary Examiner
Art Unit 2873
June 23, 2005